

## PATENT COOPERATION TREATY



## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>SMC 60509/WO   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/GB 03/00833  | International filing date (day/month/year)<br>27.02.2003   | Priority date (day/month/year)<br>02.04.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>B41M5/00 |  |  |
| Applicant<br>AVECIA LIMITED ET AL.  |  |  |

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of sheets.

- This report contains indications relating to the following items:
  - ☒ Basis of the opinion
  - ☐ Priority
  - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Lack of unity of invention
  - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Certain documents cited
  - ☐ Certain defects in the international application
  - ☐ Certain observations on the international application

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| Date of submission of the demand<br><br>08.09.2003  | Date of completion of this report<br><br>15.01.2004  |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized Officer<br><br>Martins Lopes, L<br><br>Telephone No. +31 70 340-2889<br><br> |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/00833**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-19 as originally filed

**Claims, Numbers**

1-15 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims | 1-15 |
|                               | No: Claims  |      |
| Inventive step (IS)           | Yes: Claims | 1-15 |
|                               | No: Claims  |      |
| Industrial applicability (IA) | Yes: Claims | 1-15 |
|                               | No: Claims  |      |

**2. Citations and explanations**

**see separate sheet**

## **Section V**

The following documents are referred to:

D1 : WO 00/37258

D2 : EP 1172224

Document D1 (see cl. 1) discloses a similar process comprising the application of a composition containing a binder and a polymeric biguanide, before, simultaneously or after imaging by ink jet. Chloride ion content is not limited in said composition. Namely, the examples use polyhexamethylenebiguanide hydrochloride.

Independent claim 1 differs from D1 in that the chloride content in the guanide-containing composition is limited to less than 400 ppm. In view of this difference, claim 1 is novel in the sense of Article 33(2) PCT.

Document D2 discloses a process for synthesising polyhexamethyleneguanidine phosphate comprising solvent polymerisation of 1,6-hexamethylene diisothiocyanate and 1,6-hexamethylenediamine. The synthesis does not involve chloride-containing compounds.

Independent claim 7 differs from D2 in that the synthesis starts with a guanidine salt instead of a diisothiocyanate. In view of this difference, claim 7 is novel in the sense of Article 33(2) PCT.

In view of D1 and D2 are equally novel the independent claims 11, 12, 13, 14 and 15 which are directly related to independent claims 1 and 7.

Concerning claim 1, the objective problem to be solved, in view of D1, is the provision of a process using a polyguanide solution with a low chloride-content; the advantage is the low tendency for inkjet print head clogging as explained in the description (p.1, last §). There is no disclosure or suggestion in the prior art that limiting the chloride content in the polyguanide solution would solve the mentioned problem. The effect was also not foreseeable or obvious per se. The subject-matter of claim 1 involves therefore an inventive step in the sense of Article 33(3) PCT.

Concerning claim 7, the objective problem to be solved, in view of D2, is the provision

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**EXAMINATION REPORT - SEPARATE SHEET**

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of a process of synthesis of polymonoguanide from a guanidine salt other than guanidine hydrochloride. Such a process is not disclosed or suggested in D2 or in any of the prior art documents cited in the International Search Report. The subject-matter of claim 7 involves therefore an inventive step in the sense of Article 33(3) PCT.

Independent claims 11, 12, 13, 14, and 15 are directly related to independent claims 1 and 7 and therefore also involve an inventive step in the sense of Article 33(3) PCT.